

## HYDROGEN STORAGE COMPOSITIONS AND METHODS OF MANUFACTURE THEREOF

### ABSTRACT

[0047] Disclosed herein is a method for making and screening a combinatorial library comprising disposing in a substrate comprising graphite or boron carbide at least one reactant, wherein the reactants are lithium, magnesium, sodium, potassium, calcium, aluminum or a combination comprising at least one of the foregoing reactants; heat treating the substrate to create a diffusion multiple; contacting the diffusion multiple with hydrogen having at least two phases; detecting any absorption of hydrogen; and/or detecting any desorption of hydrogen.